[Robotics Course Requirements](http://tj-adair.wikispaces.com/Robotics+Course+Requirements)

**CTE Exploring Robotics/STEM**  
  
**Instructors:**  
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**Overview:**  
Credits: 5 per semester  
Prerequisite: Acceptance into CCT Magnet  
Grades: 9-12  
  
In this dynamic technology class students get to work with Lego Mindstorms, Tetrix, and other robotics kits and components. Students learn basic programming with LabVIEW, and gain understanding in project management for robot construction and operation.  
  
This could be the beginning for you in a new and exciting career pathway in one of the fastest growing industries in the world. Being part of this class will mean that you get to compete in the FIRST Tech and FIRST Robotics competitions (TJ has the largest robotics program in the state of Colorado!).  
  
For more information check out the FIRST website: ([http://www.usfirst.org](http://www.usfirst.org/)) where you will find out more about the competition, the industry, and the class.  
  
**Materials**:  
**Engineering Notebook**. Students are expected to provide and maintain an engineering notebook throughout the year. Any spiral notebook will do, but one that is quad-ruled, like either of these, is preferred:  
[National Brand Engineering and Science Notebook (Amazon)](http://www.amazon.com/National-Engineering-Science-Notebook-33610/dp/B001E69X52/ref=sr_sp-btf_title_1_2?ie=UTF8&qid=1409007330&sr=8-2-spell&keywords=gridlined+notebook)  
[Mead Quad Spiral Notebook (Office Max)](http://www.officemax.com/office-supplies/notebooks-pads/spiral-notebooks/product-ARS30558)  
  
**$60 Lab Fee**. The lab fee is for equipment used in our curriculum that is not covered by the district. The equipment includes but is not limited to: robotics building supplies, competition fees, camcorders, headphones, microphones, videotape, wiring, and overall computer maintenance. If any student cannot afford the lab fee, see Mr. Fornstrom, CCT department chair, for a waiver.  
  
Much work will be done in the robotics lab, but it is necessary for you to bring school supplies (writing utensils, notebook, etc) with you every day.

**Suggested Reading:**  
[*I Robot*](http://www.amazon.com/I-Robot-Isaac-Asimov/dp/055338256X/ref=sr_1_1?s=books&ie=UTF8&qid=1346004615&sr=1-1&keywords=i+robot), by Isaac Asimov  
[*The New Cool: A Visionary Teacher, His FIRST Robotics Team, and the Ultimate Battle of Smarts*](http://www.amazon.com/New-Cool-Visionary-Robotics-Ultimate/dp/0307588904/ref=sr_1_1?s=books&ie=UTF8&qid=1346004895&sr=1-1&keywords=the+new+cool), by Neal Bascomb  
  
**Student Expectations:**  
Students are expected to be a successful part of the CCT program. Students must be in class and on time every day. Work missed because of excused absences can be made up according to school policy. Due to the intensive nature of this course, students can expect to spend some time after school working in the robotics lab, particularly as competitions draw near.  
  
**Course Robot Build Overview:**  
Unit 1: Drive and Stop  
Unit 2: Obstacle Detection  
Unit 3: Follow the Line  
Unit 4: Robot Chassis Construction  
Unit 5: Basic Robot Programming  
Unit 6: Arm and Gripper Construction  
Unit 7: Arm, Gripper, and Robot Programming  
Unit 8: TETRIX® Obstacle Detection  
Unit 9: Line Following  
Unit 10: Final Wrap up  
  
**Competitions:**  
During the school year, students in the Robotics class will have the opportunity to participate in FIRST Tech Challenge. We encourage students and parents to familiarize themselves with the whole FIRST Robotics program at: [http://www.usfirst.org](http://www.usfirst.org/)/  
  
**Office Hours:**  
Due to the nature of this program, we highly encourage students to come in during office hours on Wednesdays since they cannot do lab work at home. Please see TJ student planner and listen to announcements for details about office hours.  
  
**Policies:**  
Instructors will follow school policies for attendance, tardies, grades and electronic devices.